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1051. Clinical and Economic Burden of Respiratory Viral Infections in Hematopoietic Stem Cell Transplant Recipients: The MD Anderson Experience

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Background. Respiratory syncytial virus (RSV), parainfluenza virus (PIV) and influenza virus (Flu) are common respiratory viral infections (RVIs) implicated in hematopoietic stem cell transplant (HSCT) recipients. Despite their possible association with high rates of pneumonia and mortality, their clinical and economic burden has not been well studied.

Methods. HSCT recipients with documented RVI who were treated at our institution between September 2012 and October 2015 were included in the study. We used Vizient (formerly University Health Consortium) clinical database to collect and compare total costs, including length of stay, ICU admission rates, intravenous immunoglobulin use, steroid use, and mortality rates among RVIs in HSCT recipients. Encounter-specific demographics, risk factors, underlying cancer, and outcomes were also collected. Multiple linear regression analyses were applied to identify predictors of higher total cost associated with RVI in HSCT recipients at MD Anderson.

Results. Average total cost per encounter was \$49,371 for RSV, \$29,679 for PIV, and \$15,077 for Flu. A total of 1,636 hospitalization days (d) were attributed to these RVIs with an average of 7 d per RSV, 8 d per PIV, and 5 d for Flu infection. The average ICU admission rate was 12% for RSV, 9% for PIV, and 4% for Flu. Around 11% of total RVI encounters had active graft-vs.-host disease at the time of their RVI. Out of the patients with upper respiratory infection, 20% RSV, 44% PIV, and 21% Flu progressed to pneumonia during the 28 d of the study period. Of the 246 total RVI encounters, overall all-cause mortality rate was 6% (RSV: 8% [8/98], PIV: 1% [1/70] and Flu: 8% [6/78]). Length of stay, ICU admission, and receiving intravenous immunoglobulin were strong predictors of higher cost for all RVIs.

Conclusion. This study underscores the significant impact of RVIs in terms of economic and clinical burden in HSCT recipients. Major differences in total costs per encounter across the three RVIs were observed. This cost and clinical data may be helpful for future cost effectiveness studies in this population.

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1052. Severe Fever with Thrombocytopenia Syndrome Virus Infection Associated with Hemophagocytic Lymphohistiocytosis as Poor Prognostic Factor

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Background. Severe fever with thrombocytopenia (SFTS) is an emerging infectious disease caused by a novel bunyavirus designated SFTS virus (SFTSV) with a high fatality rate. Hemophagocytic lymphohistiocytosis (HLH) is an immune-mediated life-threatening disease triggered by infections, neoplasms and noninfectious inflammatory diseases. A few HLH associated with SFTSV were reported. According to the diagnostic criteria of HLH, 11 patients with SFTS were reviewed.

Methods. During last 2 years (2015–2016), 11 SFTS patients were diagnosed at the Wonju Severance Christian Hospital, Yonsei University Wonju College of Medicine, Wonju, South Korea. Clinical features were analyzed using diagnostic criteria of 2004-HLH trial. We described if the prognosis of SFTSV-infected patients was associated with clinical features of HLH.

Results. Of 11 patients, four patients were fulfilled the diagnostic criteria of 2004-HLH trial (five of eight criteria). Two patients were fulfilled the four criteria. Five patients were fulfilled three or less criteria. Three of six patients who fulfilled four or more criteria were died. There was no mortality in five patients who fulfilled three or less criteria. Hemophagocytosis in bone marrow (BM) was observed in all six patients who were taken BM study.

Conclusion. In SFTS, HLH was severe clinical feature and it might be associated with poor prognosis.

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1053. Factors for Hospitalizations and Neurologic Complications in Zika Virus Infection in the Department of Veterans Affairs (VA)

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Background. Zika virus (ZIKV) is an important flavivirus, but severity of infection is poorly described in adults. We investigated factors associated with hospitalization and neurologic complications as measures of severity.

Methods. ZIKV cases from December 1, 2015 to October 31, 2016 were identified from clinical samples tested in VA, state and commercial laboratories, and patients were followed until 3/31/2017. ZIKV positive patients (RT-PCR or screening IgM positive confirmed by a plaque-reduction neutralization test [PRNT] IgM positive for ZIKV alone or including dengue virus) were reviewed for demographic and clinical factors. Logistic regression analysis was performed to evaluate factors associated with 1) hospitalization and 2) neurologic complications in VA ZIKV positive patients.

Results. 736 of 1,538 (48%) patients tested were ZIKV positive; 655 (89%) were male and 683 (93%) were diagnosed at the VA Caribbean Healthcare System (VACHCS). In total, 94 (13%) were hospitalized with 91 (12%) at VACHCS. 19 (3%) patients, all at VACHCS, died from any cause after ZIKV diagnosis. Hospitalization was more likely with increased age, co-morbidities, neurologic symptoms, thrombocytopenia, or preadmission glucocorticoid use, and less likely if rash was present (Table 1). Hospitalization, prior cerebrovascular disease and dementia were associated with neurologic complications.

Conclusion. Older Veterans with multiple comorbidities or presenting with neurologic symptoms were more likely to be hospitalized after ZIKV infection, and those with a prior history of cerebrovascular disease and dementia were at increased risk for neurologic complications.

Table 1. Factors associated with hospitalization and neurologic complications among Veterans with ZIKV infection, December 1, 2015–October 31, 2016.

Hospitalization Factors	OR _{adj}	95% CI
Age group (10 years)	1.3	1.0, 1.8
Charlson co-morbidity index (age-adjusted)	1.2	1.1, 1.4
Connective tissue disease	15.0	1.7, 130.7
Congestive heart failure	4.9	1.8, 13.5
Neurological symptoms	5.3	2.4, 11.7
Thrombocytopenia (<155 platelets/ μ L)	4.7	2.2, 10.0
Glucocorticoid use (within 30 days of ZIKV testing)	16.8	1.8, 157.0
Rash	0.23	0.11, 0.47
Neurologic complication factors		
Hospitalized	5.9	2.9, 12.2
Cerebrovascular disease	4.9	1.7, 14.4
Dementia	2.8	1.2, 6.6

ORadj, adjusted odds ratio; CI, confidence interval.

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1054. Clinical and Laboratory Characteristics of Parvovirus B19 Infection During 2013/2014 Outbreak in Zagreb, Croatia

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Background. Human Parvovirus B19 (HPV-B19) occurs worldwide and causes mild, acute exanthematous disease that occurs in a form of cyclic local epidemics. The aim of this study was to analyze clinical features and complication rates of acute HPV-B19 infection in different age groups.

Methods. We retrospectively reviewed the charts of 718 consecutive patients clinically diagnosed with acute HPV-B19 infection who visited outpatient department at the University Hospital for Infectious Diseases in Zagreb, Croatia during 2013–2014 outbreak. In 212 patients (of 298 tested) diagnosis was confirmed by positive IgM antibodies and/or HPV-B19 DNA in peripheral blood.

Results. Outbreak started in June 2013 and had a peak in April 2014, with highest prevalence in schoolchildren. There were no difference in clinical presentation or laboratory findings between clinically and serologically diagnosed patients. Biphasic presentation, fever, myalgia, arthralgia, headache and peripheral edema were more frequent in adults, but „slapped cheeks” was found predominantly in children. Complications were more common in adults, most commonly hematological disorders (mild anemia,